

### REMARKS

Applicants' hereby acknowledge the removal of the prior rejections under 35 U.S.C. 112. The Examiner is also hereby informed that claim 18 has been amended to properly reflect its dependency from claim 1. Claims 36, 40 and 46 have been amended to limit the invention in order to distinguish the claims from the prior art. Claims 43 and 44 have also been canceled.

The Examiner has rejected claims 36-43, 46, 47, 50 and 51 under 35 U.S.C. 102(b) as being anticipated by U.S. patent 5,936,037 to Tasaka. It is respectfully submitted that the rejection has been overcome by the instant amendment. Claim 36 has been amended limiting the adhesive composition to include from about 70% by weight to about 98.9% by weight of said ethylene/alpha-olefin copolymer. This amendment is supported at page 16, lines 18-21 of the specification, and by original claims 43-44. Tasaka fails to teach an adhesive composition having the claimed composition as presently amended.

The invention provides an adhesive composition comprising an adhesive combination of at least one tackifier, at least one ethylene/alpha-olefin copolymer and at least one styrenic block copolymer, which styrenic block copolymer consists essentially of a styrene/butadiene/styrene block copolymer, a styrene/ethylene butylene random/styrene block copolymer, a styrene/isobutylene/styrene block copolymer, a styrene/isoprene/styrene block copolymer or a styrene/hydrogenated butylene/styrene block copolymer; wherein said adhesive combination comprises from about 70% by weight to about 98.9% by weight of said ethylene/alpha-olefin copolymer.

As the Examiner points out, Tasaka teaches a composition C-1 which comprises 100 parts by weight of a block copolymer (a), 20-300 parts by weight of a softening agent (b), 1-150 parts by weight of a peroxide-crosslinking olefinic resin (c), 10-150 parts by weight of a peroxide-decomposing olefinic resin (d), 1-1200 parts by weight of a polymer

component (e), and 0-100 parts by weight of a hydrogenated petroleum resin (f). The Examiner is correct that Tasaka teaches a composition C-1 that includes each of an ethylene- $\alpha$ -olefin copolymer, a tackifier and a styrenic block copolymer. However, Tasaka fails to teach an adhesive composition *consisting essentially of* the three component composition of the claimed invention. Particularly, in their embodiments that include a tackifier, the Tasaka composition additionally requires the incorporation of both a softening agent and a polymer component (e) which comprises either a polyester copolymers, a polyamide copolymer or a polyurethane copolymer. It is respectfully submitted that the presence of these additional components results in a materially different composition. Further, Tasaka et al. fails to teach a composition comprising all three of said components wherein the ethylene/alpha-olefin copolymer component comprises from 70% by weight to about 98.9% by weight of the overall composition. For theses reasons it is submitted that the rejection has been overcome by the instant amendment.

The Examiner has rejected claims 36-43, 46-48, 50 and 51 under 35 U.S.C. 102(b) as being anticipated by U.S. patent 6,582,829 to Quinn et al. It is respectfully submitted that the rejection has been overcome by the instant amendment. Claim 44 is currently canceled, but its lower limitation for the ethylene/alpha-olefin copolymer component has been added to claim 36. Claim 43 has been canceled, but its upper limitation has been added to claim 36.

As the Examiner points out, Quinn et al. teach a composition comprising 5-50 weight percent of an ethylene/alpha-olefin copolymer, 1-40 weight percent of a block copolymer and 10-80 weight percent of a tackifier. It is respectfully submitted that the rejection has been overcome by the instant amendment limiting the ethylene/alpha-olefin copolymer component of the claimed adhesive combination to from about 70% by weight to about 98.9% by weight. Such a composition is not taught by Quinn et al. For this reason, it is submitted that the rejection has been overcome.

The Examiner has rejected claims 44 and 45 under 35 U.S.C. 103(a) as being obvious over Quinn et al. It is respectfully submitted that the rejection is incorrect. Claim 44 is currently canceled, but its lower limitation for the ethylene/alpha-olefin copolymer component has been added to claim 36. Claim 45 remains pending.

In paragraph 6 of the Office Action, the Examiner correctly states that Quinn et al. fails to teach the claimed ranges of 70-95% and 75-85%. However, the Examiner argues that Quinn, et al. teaches that their ethylene/alpha-olefin copolymer component is only required to be greater than 5 wt. % of their composition, and only teach 50% as a typical upper limit. To support this position, the Examiner points to col. 5, lines 22-29 of Quinn et al. and argues that it would have been obvious to one skilled in the art to optimize the concentration of the ethylene/alpha-olefin copolymer. At col. 5, lines 22-29, Quinn states:

The homogeneous ethylene/alpha-olefin interpolymer will be present in the adhesive composition of the invention in an amount greater than about 5 wt-%, and preferably greater than about 10 wt-%. The homogeneous ethylene/alpha-olefin interpolymer will typically be present in the adhesive of the invention in an amount less than about 50 wt-%, preferably less than about 40 wt-%, and more preferably less than about 30 wt-%. (emphasis added)

It is respectfully submitted that the Examiner has incorrectly interpreted this disclosure of Quinn et al. as teaching or suggesting an unfixed upper limit for said ethylene/alpha-olefin copolymer component, and has improperly concluded that any concentration greater than 50 wt. % is suggested. To the contrary, viewing the reference as a whole, Applicants respectfully assert that an upper limit of 50 wt. % has been established for the ethylene/alpha-olefin copolymer component of the Quinn composition. The Examiner is directed particularly to the abstract of the disclosure; claims 1, 22, 36, 53, 54 and 56; Table A from col. 10; the pressure sensitive adhesive examples from columns 17-20; the hot melt adhesive examples from columns 20-23; and the bookbinding adhesive examples from columns 23-27. None of these Examples or description supports ethylene/alpha-olefin copolymer concentrations of greater than 50 wt. %. To the contrary, the Quinn

disclosure as a whole teaches away from compositions having greater than 50 wt. % of an ethylene/alpha-olefin copolymer, strongly supporting compositions having at least 50% of other components, such as tackifiers, styrenic block copolymers, waxes and/or plasticizing oils, and including ethylene/alpha-olefin copolymer concentrations of less than 50 wt. %.

In asserting that it would have been obvious to one skilled in the art to optimize the concentration of the ethylene/alpha-olefin copolymer with the disclosed range, it is respectfully submitted that the Examiner has incorrectly interpreted and applied patent case law. According to *In re Aller*, “[i]t is *prima facie obvious* to optimize a known result effective variable through the process of routine experimentation. *In re Aller*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955). However, the Examiner’s analysis is flawed because it implicitly presupposes, without any evidence or rationale, that the optimization of variables in accordance with the reference teachings yield the adhesive composition defined by the presently amended claims.

There is simply no teaching or suggestion in the applied reference to support an ethylene/alpha-olefin copolymer concentration of greater than 50 wt. %. “It is well settled that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so” ACS Hospital Sys., Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). It is further respectfully submitted that the Examiner has applied an impermissible “obvious to try” standard of patentability, particularly that it would be obvious to try other ethylene/alpha-olefin copolymer concentrations not supported by the Quinn disclosure. Such is not a proper standard of obviousness. For these reasons, it is respectfully submitted that the rejection is incorrect and should be withdrawn.

The Examiner has rejected claims 36-48 under 35 U.S.C. 103(a) over JP 09-302,319 to Sato et al. It is respectfully submitted that the rejection has been overcome by the instant amendment. Claim 36 has been amended to further limit the styrenic block copolymer component of the claimed adhesive compositions. Sato et al. does not teach the adhesive compositions as amended.

Sato et al. teaches specific hot melt adhesive compositions containing a specific ethylene- $\alpha$ -olefin copolymer, a styrene-ethylene-propylene-styrene (SEPS) block copolymer and a tackifier. Their hot melt adhesive composition is used in the manufacture of sanitary goods such as disposable diapers and sanitary napkins. The adhesive compositions of Sato et al. achieve their desired properties only by using their particularly disclosed ethylene- $\alpha$ -olefin copolymers in conjunction with a styrene-ethylene-propylene-styrene block copolymer. As discussed in paragraph [0033] of the reference, only SEPS has a compatible chemical structure with their necessary ethylene- $\alpha$ -olefin copolymers, whereas other styrenic block copolymers, such as styrene-isoprene-styrene (SIS) block copolymers, styrene-butadiene-styrene (SBS) block copolymers and styrene-ethylene-butylene-styrene (SEBS) block copolymers, etc., are specifically described as unacceptable for achieving the necessary adhesive properties in their formulation. The Examiner has rejected the claims due to the incorporation of styrene/ethylene ethylene-propylene random/styrene block copolymer (SEEPS), stating that it would be obvious to one skilled in the art to use any styrene block copolymer having ethylene and propylene as the middle block. Accordingly, Applicants' have amended the claims to remove SEEPS from the scope of the claimed styrenic block copolymers. However, it is asserted that the applied reference specifically teaches away from the use of any of the remaining styrenic block copolymers from claim 36. Accordingly, it is submitted that the rejection has been overcome.

The Examiner has rejected claims 1-35 and 52-61 under 35 U.S.C. 103(a) over U.S. Patent Application 2004/0197567 to Tsai et al. in view of Ikeda et al., EP 857,758

(corresponds to U.S. patent 6,214,476). It is respectfully submitted that the rejection is not well taken.

First and foremost, Applicants submit that U.S. Patent Application 2004/0197567 to Tsai et al. is unavailable as prior art because the filing date of the present application predates its effective filing date. For prior art purposes, the effective filing date of Tsai et al. is April 15, 2004, while the present application has an earlier filing date of February 20, 2004. Even though Tsai et al. is a division of U.S. application serial no. 09/603,151 filed on June 23, 2000, the 09/603,151 application is abandoned, and was never published since it was filed prior to November 29, 2000. An abandoned patent application becomes available as prior art only as of the date the public gains access to it. See 37 C.F.R. 1.14(a)(1)(ii) and (iv). Accordingly, the 09/603,151 application itself did not qualify as prior art until it was appropriately disclosed via the publication of the Tsai et al. reference.

An abandoned patent application may become evidence of prior art only when it has been appropriately disclosed, as, for example, when the abandoned patent [application] is reference[d] in the disclosure of another patent, in a publication, or by voluntary disclosure under [former Defensive Publication rule] 37 CFR 1.139. *Lee Pharmaceutical v. Kreps*, 577 F.2d 610, 613, 198 USPQ 601, 605 (9th Cir. 1978).

See also MPEP § 2127. Since the earliest effective prior art date of both U.S. patent application 2004/0197567 and U.S. application serial no. 09/603,151, both of which are abandoned, is April 15, 2004, the present application pre-dates the applied Tsai et al. reference, and the Tsai et al. reference is unavailable as prior art. Accordingly, it is submitted that the rejection must be withdrawn.

Secondly, in view of the Communications Omnibus Reform Act of 1999, it is further submitted that the Tsai et al. reference is not available as prior art under 35 U.S.C. 103(a) because the present application and the Tsai et al. reference were, at the time the invention was made, both owned by the same company and subject to an obligation of assignment to the same company, Honeywell International Inc. (formerly AlliedSignal,

Inc.). Accordingly, the Tsai et al. reference is unavailable as prior art and the rejection must be withdrawn.

Nonetheless, the claimed invention remains distinguishable from the applied art on its technical merits. The claimed invention provides multilayered films comprising a fluoropolymer layer attached to a thermoplastic polymer layer via an intermediate adhesive tie layer, which adhesive tie layer comprises an adhesive combination of at least one tackifier, at least one ethylene/alpha-olefin copolymer and at least one styrenic block copolymer. The adhesive composition adheres layers of such dissimilar polymeric materials that are otherwise incompatible, and achieves a significantly improved interlayer bond strength between fluoropolymer and thermoplastic polymer layers as compared to the art. See, for example, Example 2 on page 25 of the specification, which illustrates a PCTFE/tie/COC film structure having a superior bond strength of 1860 g/inch. See also Example 3 on page 26 of the specification which illustrates another PCTFE/tie/COC film structure having a superior bond strength of 1720 g/inch.

Tsai et al. discloses multilayer moisture barrier films useful as packaging materials. More particularly, Tsai et al. describes multilayer barrier films that comprise a fluoropolymer layer attached to a cyclic olefin polymer layer via an adhesive tie layer which adhesive comprises a polyurethane, an epoxy or at least one functionalized polyolefin composition. As the Examiner acknowledges, Tsai et al. fails to disclose the adhesive compositions of the presently claimed invention. More specifically, Tsai et al. fails to teach an adhesive comprising a styrenic block copolymer, a tackifier and an ethylene- $\alpha$ -olefin copolymer.

To fill this void, the Examiner has applied Ikeda et al. Ikeda et al. teaches a specific adhesive composition which includes a modified and hydrogenated block copolymer, a tackifier, and optionally an ethylenic polymer that may be an ethylene- $\alpha$ -olefin copolymer. It is respectfully submitted that the Examiner has improperly combined the references. Ikeda et al. does not describe film structures that include a fluoropolymer layer. *Importantly, there is no teaching or suggestion in either reference to combine the*

*multilayer films disclosed by Tsai et al. with the adhesive compositions described by Ikeda et al.* While Tsai et al. does describe fluoropolymer layer containing multilayer film structures, their structures do not incorporate adhesive tie layers that may include a tackifier, nor do they teach adhesive tie layers that may include a styrenic block copolymer. More importantly, Tsai et al. fails to teach or suggest an adhesive tie layer composition that may comprise a combination of an ethylene/alpha-olefin copolymer, a tackifier and a styrenic block copolymer.

In determining a *prima facie* case of obviousness, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification. *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). To do so, the applied prior art must be such that it would have provided one of ordinary skill in the art with both a motivation to carry out the claimed invention and a reasonable expectation of success in doing so. *See In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991); *In re O'Farrell*, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988). The Ikeda et al. and Tsai et al. references fail to provide such motivation, particularly with a reasonable expectation of success.

*Particularly, there is no evidence in the Ikeda et al. reference that their adhesive compositions would even be compatible with fluoropolymer, let alone have a reasonable expectation of success to adhere fluoropolymer layers with other polymeric layers.* As the Tsai et al. reference exemplifies, it is difficult to achieve a strong bond between fluoropolymer layers and other non-fluoropolymer layers. Indeed, Applicants have previously directed the Examiner to specific evidence illustrating the difference in bond strengths achieved by different adhesive tie layer compositions when comparing preferred PCTFE/tie/COC films of Tsai et al. and the claimed invention. For example, Tsai et al. discloses the bond strength of their PCTFE/tie/COC films as having interlayer bond strengths of **between 580 grams/inch and 600 grams/inch** per the ASTM F904 testing method (see paragraph 33). Utilizing the identical ASTM F904 testing method, the



PCTFE/tie/COC films of the presently claimed invention achieve bond strengths nearly three times that achieved by Tsai et al. See, for example, Examples 2 and 3 of the presently claimed invention which describe PCTFE/tie/COC films having bond strengths of **1860 g/inch and 1720 g/inch**, respectively. The multilayer fluoropolymer films of the invention therefore have superior delamination resistance over the multilayer fluoropolymer films of the Tsai reference. *It is respectfully submitted that the Examiner has not given adequate weight to this important evidence.*

At page 8 of the Office Action, the Examiner has rejected this evidence as “not commensurate in scope with the invention as claimed”. The Examiner’s analysis is not correct. To be sure, the evidence certainly is commensurate in scope with the invention as claimed. The Examiner’s reasoning is that Examples 2 and 3 of the invention teach only a preferred embodiment of the invention, rather than a more generic sample. Particularly, the Examiner reasons that Examples 2 and 3 only illustrate a PCTFE/tie layer/COC film with a tie layer comprising 82% wt. % ethylene/alpha-olefin copolymer, 15 wt. % tackifier and 3 wt. % of a styrenic block copolymer, while the claimed film which more broadly covers any fluoropolymer layer being attached to any thermoplastic polymer layer via an adhesive layer that is not limited to any specific quantity amounts of ethylene/alpha-olefin copolymer, tackifier and styrenic block copolymer. It is unclear how this evidence is not commensurate in scope with the invention as claimed. The Examiner’s reasoning appears to suggest that a more generic, less specific example would be more persuasive evidence. It is respectfully submitted that this conclusion is flawed. Indeed, the evidence of Examples 2 and 3 should be viewed as more persuasive than a generic sample because it offers a direct comparison to the PCTFE/tie/COC structure of the Tsai reference. Further, it would be overly burdensome for the Applicant to provide Examples with every possible tie layer composition useful for adhering fluoropolymer layers to other thermoplastic polymer layers, nor is such required by law. It is submitted that the Examiner has improperly dismissed this evidence, and it is urged that it be reconsidered.

The Examiner has also dismissed Applicants' prior arguments as unpersuasive, stating that the combination of Tsai et al. and Ikeda et al. is proper because the adhesive of Ikeda et al. is described as useful in film packaging materials for pharmaceutical products. It is respectfully submitted that the Examiner has applied an incorrect standard of patentability. The standard for combining references is not whether or not the references apply to similar fields of art, but whether there is sufficient motivation in the references to support their combination.

Where Claimed subject matter has been rejected as obvious in view of prior art references, a proper analysis under 35 U.S.C. 103 requires consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composite or device or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out the claimed invention those of ordinary skill would have a reasonable expectation of success. See *In Re Dow Chemical Company* 837 Fed. 2d 469, 473, 5 USPQ 2d 1529, 1531 (Fed. Cir. 1988).

Applicants respectfully assert that such a suggestion and/or reasonable expectation of success could not be found in the cited references. Neither Tsai et al., nor Ikeda et al., taken singularly or in combination, teach or suggest the claimed subject matter. The Patent and Trademark Office Board of Appeals and Interferences stated the following in *Ex parte Clapp*, 227 USPQ 972 (1985), at page 973:

Presuming arguendo that the references show the elements or concepts urged by the Examiner, the Examiner has presented no line of reasoning, and we know of none, as to why the artist when viewing only the collective teachings of the references would have found it obvious to selectively pick and choose various elements and/or concepts from the several references relied on to arrive at the claimed invention. In the instant application, the Examiner has done little more than cite references to show that one or more elements or some combinations thereof, when each is viewed in a vacuum, is known. The claimed invention, however, is clearly directed to the combination of elements. That is to say, applicant does not claim that he has invented one or more new elements but has presented claims to a new combination of elements. To support the conclusion of

the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed combination where the Examiner must present a convincing line of reasoning as to why the artist would have found the claimed invention to have been obvious in light of the teaching of the references.

With the above directives, consideration must be given as to whether the combination of references in the manner set forth in the Office Action is proper to render the applicant's invention obvious in view thereof. As set forth hereinabove, Applicant's respectfully assert that the references do not teach or suggest the combination as set forth in the claims, as is evident from the plurality of differences between applicant's invention and the cited art. Again, the combination of references must teach the claimed combination to render applicant's claimed invention obvious under 35 U.S.C. 103.

The Examiner further states that the adhesives of Tsai et al. are not limited to the particular adhesives exemplified therein because they are described as "non-exclusive". However, Applicants submit that the Examiner is looking beyond the teachings of the references. Particularly, the belief that one skilled in the art **could** use a different adhesive tie layer than the materials described in Tsai et al. to form the claimed multilayered film does not suggest that one **should** form such a film to obtain the disclosed benefits. The mere fact that references **can** be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Such a suggestion is absent in each of the references. Accordingly, it is respectfully submitted that one skilled in the art would not look to the Ikeda et al. reference in combination with the Tsai et al. reference to arrive at the presently claimed invention.

The Examiner further argues that one skilled in the art would expect the adhesives of Ikeda, et al. to perform as the tie layer in the film of Tsai et al. because Tsai and Ikeda both describe adhesives comprising polyolefins and carboxylic functional groups. Such is incorrect. A polyolefin is merely a part of the adhesive compositions taught by both Tsai and Ikeda, while the adhesive composition of one reference is substantially different

compared to the other. Moreover, such is not motivation to combine the references. It is submitted that the applied references do not offer a teaching or suggestion to one skilled in the art to combine the applied references, and one skilled in the art would not be motivated to combine the references without having prior knowledge of the claimed invention.

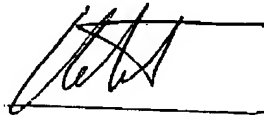
It is respectfully submitted that the Examiner is reconstructing the art in light of Applicants' disclosure. The point in time that is critical for an obviousness determination is at the time the invention. "To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983). Obviousness cannot be established by hindsight combination to produce the claimed invention. *In re Gorman*, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed.Cir.1991). It is the prior art itself, and not the Applicants' achievement, that must establish the obviousness of the combination. Where Applicants' teachings are needed to find the invention, the invention is not obvious.

Additionally, it is firmly established that in determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983); *Schneck v. Nortron Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983). It is respectfully asserted that the invention as a whole would not have been obvious to one of ordinary skill in the art at the time the invention was made.

For the foregoing reasons, it is respectfully submitted that the claims are not obvious in view of the Tsai et al. and Ikeda et al. references, either alone or in combination. It is therefore requested that the rejection be withdrawn.

The undersigned respectfully requests re-examination of this application and believes it is now in condition for allowance. Such action is requested. If the Examiner believes there is any matter which prevents allowance of the present application, it is requested that the undersigned be contacted to arrange for an interview which may expedite prosecution.

Respectfully submitted,



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I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office (FAX No. 571-273-8300) on April 26, 2006.



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